UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,801	06/26/2003	Satyendra Yadav	P-5687-US	2806

7590 02/07/2006	EXAMINER
EITAN, PEARL, LATZER & COHEN ZEDEK LLP	ADDY, ANTHONY S

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ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *17 January 2006*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,7,11,14,15,18,23 and 31-34* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1,7,11,14,15,18,23 and 31-34* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *26 June 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January

17, 2006 has been entered. **Claims** 1, 7, 11, 14, 15, 18, 23 and 31-34 are now pending

in the present application.

Response to Arguments

2.   Applicant's arguments with respect to claims 1, 7, 11, 14, 15, 18, 23 and 31-34

have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

4.   Claims 1, 7, 14, 15, 18, 23 and 32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Whitehill et al., U.S. Publication Number 2004/0028017 A1**

(hereinafter Whitehill) and further in view of **Dacosta, U.S. Patent Number 6,978,023**

(hereinafter Dacosta).

Regarding claim 1, Whitehill teaches a method comprising determining a location of a client by determining a direction of a source of a signal received from said client **(see p. 2 [0016, lines 9-22], p. 3 [0035, lines 13-20] and p. 4 [0038, lines 7-16])**; and determining whether to grant said client access to a wireless local area network based on said location **(see p. 2 [0015], p. 2 [0017, lines 10-15], p. 3 [0028, lines 6-10], p. 3 [0035, lines 13-20] and p. 4 [0038, lines 13-16])**.

Whitehill fails to explicitly teach determining a location of a client based on a location fingerprint.

Dacosta, however, teaches an apparatus and method for location based wireless client authentication, wherein a spatial location of the wireless client is identified using multipath fingerprinting **(see col. 2, lines 8-16 and col. 7, lines 34-39)**. Dacosta, further teaches for example, when an access request is received from a wireless client, pattern matching may be used to estimate the location of client based on multipath characteristics of the received signal and if the exact location of matching multipath characteristics is stored in a database, the location of the wireless client may be estimated with nearly one hundred percent accuracy **(see col. 7, lines 39-47)**.

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Dacosta using multipath fingerprinting techniques to locate a wireless client to the method for determining the physical location of a mobile node in a wireless network of Whitehill, to include determining a location of a client based on a location fingerprint, in order to estimate the location of the mobile node with a higher accuracy as per the teachings of Dacosta **(see col. 7, lines 39-47)**.

Regarding claim 7, Whitehill in view of Dacosta teaches all the limitations of claim

1. Dacosta further teaches a method, comprising: using a location fingerprint based on

multipath characteristics to determine said location of said client **(see col. 7, lines 34-**

47).

Regarding claim 14, Whitehill in view of Dacosta teaches all the limitations of

claim 1. In addition, Whitehill teaches a method, comprising accepting signals from a

signal receiver pair wherein a first receiver of said signal receiver pair is to determine a

location of a client relative to a permitted area **(see p. 3 [0035, lines 13-20**, i.e. the

wireless routers and access point reads on a signal receiver pair**])**, and a second

receiver of said signal receiver pair is to transmit data to said client **(see p. 4 [0038-**

0040]).

Regarding claim 15, Whitehill teaches a system comprising: first and second

signal receivers **(see p. 3 [0029, lines 1-7], p. 3 [0030] and Figures 1 & 2)**; and a

processor to withhold access of a client to a wireless local area network if said client is

outside of a permitted area **(see p. 3 [0028, lines 3-10], p. 4 [0038, lines 13-16] and**

Fig. 1 [i.e. Authentication, Authorization and Accounting (AAA) server 105 reads on a

processor to withhold access of a client to a wireless local area network if said client is

outside of a permitted area, since Whitehall teaches the authentication server can

determine if the location of a wireless user is within a defined space, such as building

outline, and the authentication server may reject users that are outside the perimeter**])**,

wherein said first signal receiver is to determine a location of said client relative to said

permitted area, and said second signal receiver is to transmit data to said client **(see p. 4 [0038-0040])**.

Whitehill fails to explicitly teach determining a location of said client using a location fingerprint.

Dacosta, however, teaches an apparatus and method for location based wireless client authentication, wherein a spatial location of the wireless client is identified using multipath fingerprinting **(see col. 2, lines 8-16 and col. 7, lines 34-39)**. Dacosta, further teaches for example, when an access request is received from a wireless client, pattern matching may be used to estimate the location of client based on multipath characteristics of the received signal and if the exact location of matching multipath characteristics is stored in a database, the location of the wireless client may be estimated with nearly one hundred percent accuracy **(see col. 7, lines 39-47)**.

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Dacosta using multipath fingerprinting techniques to locate a wireless client to the method for determining the physical location of a mobile node in a wireless network of Whitehill, to include determining a location of said client using a location fingerprint, in order to estimate the location of the mobile node with a higher accuracy as per the teachings of Dacosta **(see col. 7, lines 39-47)**.

Regarding claim 18, Whitehill in view of Dacosta teaches all the limitations of claim 15. In addition, Whitehill teaches a system, wherein said second receiver is an access point, and wherein said first receiver includes a wireless component whose

location is known **(see p. 3 [0035, lines 15-18], p. 2 [0017, lines 3-10], p. 4 [0038-0040] and Fig.1)**.

Regarding claim 23, Whitehill in view of Dacosta teaches all the limitations of claim 15. In addition, Whitehill teaches a system, wherein said first and second signal receivers are signal receivers of a signal receiver pair **(see p. 4 [0038-0040] and p. 3 [0035, lines 13-20**, i.e. the wireless routers and access point reads on a signal receiver pair]).

Regarding claim 32, Whitehill teaches a method comprising: receiving location data at an authentication system of a local area network; and determining whether to grant said client access to a wireless local area network based on said location signal **(see p. 3 [0028] and p. 4 [0038-0040])**.

Whitehill fails to explicitly teach receiving location data of a client based on a location fingerprint.

Dacosta, however, teaches an apparatus and method for location based wireless client authentication, wherein a spatial location of the wireless client is identified using multipath fingerprinting **(see col. 2, lines 8-16 and col. 7, lines 34-39)**. Dacosta, further teaches for example, when an access request is received from a wireless client, pattern matching may be used to estimate the location of client based on multipath characteristics of the received signal and if the exact location of matching multipath characteristics is stored in a database, the location of the wireless client may be estimated with nearly one hundred percent accuracy **(see col. 7, lines 39-47)**.

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Dacosta using multipath fingerprinting techniques to locate a wireless client to the method for determining the physical location of a mobile node in a wireless network of Whitehill, to include receiving location data of a client based on a location fingerprint, in order to estimate the location of the mobile node with a higher accuracy as per the teachings of Dacosta **(see col. 7, lines 39-47).**

5.   Claims 11, 31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Whitehill et al., U.S. Publication Number 2004/0028017 A1 (hereinafter Whitehill)** and **Dacosta, U.S. Patent Number 6,978,023 (hereinafter Dacosta)** as applied to claims 1 and 32 above, and further in view of **Baral et al., U.S. Publication Number 2004/0162070 A1 (hereinafter Baral).**

Regarding claims 11 and 33, Whitehill in view of Dacosta teaches all the limitations of claims 1 and 32. Whitehall further teaches a method, comprising: defining a boundary of a permitted area **(see p. 3 [0034] and Fig. 3).**

Whitehill in view of Dacosta fails to explicitly teach recording instances of attempts to gain access to said wireless local area network from outside said boundary.

Baral, however, teaches a method for monitoring and filtering abnormal behavior of mobile stations in a wireless network, wherein instances of attempts to gain access to said wireless local area network are recorded **(see p. 1 [0008], p. 2 [0022] and p. 2 [0030]).**

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify Whitehill and Dacosta with Baral to include a method of recording instances of attempts to gain access to said wireless local area network from outside said boundary, in order to monitor and filter abnormally high frequency of registrations of a malfunctioning, or rogue, mobile stations on a network as taught by Baral **(see p. 1 [0001])**.

Regarding claims 31 and 34, the combination of Whitehill, Dacosta and Baral teaches all the limitations of claims 11 and 33. Whitehill further teaches a method, comprising excluding said client from access to said network if a known identity of said client corresponds to one or more of said instances of attempts to gain access to said network **(see p. 3 [0028, lines 6-10], p. 3 [0035, lines 13-20], p. 4 [0038, lines 13-16] and p. 4 [0040])**.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Groenendaal et al., U.S. Publication Number 2004/0185876 A1 discloses mobility management in wireless networks.

Tao et al., U.S. Publication Number 2005/0246334 A1 discloses location determination and location tracking in wireless networks.

Holt, U.S. Patent Number 6,608,593 discloses system and method for determining the location of a transmitter using passive reflectors or refractors as proxy receivers.
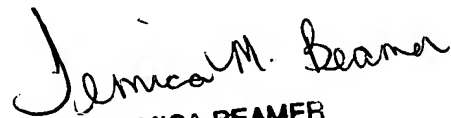
7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony S. Addy whose telephone number is 571-272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony S. Addy
January 26, 2006

TEMICA BEAMER
PRIMARY EXAMINER

2/3/06